

## CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

-1-

- 5           A chair comprising:
- a recliner mechanism;
- a back movably mounted to said recliner mechanism, said recliner mechanism permitting said back to recline under a force to a selectable limit;
- a seat movably mounted to said recliner mechanism and operatively linked to
- 10   said back, whereby said seat moves forwardly as said back reclines;
- a recline limit control mechanism for adjustably controlling said selectable limit, said control mechanism including a trackway and a stop, at least one of said trackway and said stop traveling forwardly along a path as said seat moves forwardly, said selectable limit being defined by engagement of said stop with said trackway, said stop being movable with respect
- 15   to said trackway such that said selectable limit is adjusted by movement of said stop.

-2-

The chair of claim 1 wherein said trackway includes a plurality of laterally offset steps.

-3-

- 20           The chair of claim 2 wherein said offset steps are offset from one another in a lateral direction and in a longitudinal direction.

-4-

The chair of claim 3 wherein said offset steps are offset from one another in a lateral direction and in a longitudinal direction.

-5-

5                   The chair of claim 4 wherein said trackway is carried by said seat and said stop is mounted to said recliner mechanism.

-6-

The chair of claim 5 wherein said stop is slidably mounted within a track on said recliner mechanism.

10

-7-

The chair of claim 6 wherein said control mechanism includes a lever, a rotor mounted to said lever and a cable mounted to said rotor, said stop being mounted to said cable, whereby movement of said lever results in movement of said stop.

-8-

15

The chair of claim 7 further comprising a bias means for biasing said seat in a rearward position at a tension, said bias means including a biasing element extending between said recliner mechanism and said seat, said biasing element having a pre-tension; and  
a tension control mechanism for adjustably controlling said tension by selectively varying said pre-tension in said biasing element.

20

-9-

The chair of claim 8 wherein said tension control mechanism includes a tension knob that is rotatably mounted to said chair, said tension knob being operatively linked to said

-34-

biasing element such that rotation of said tension knob results in variation in said pre-tension in said biasing element.

-10-

The chair of claim 9 wherein said tension knob includes a shaft, said lever being  
5 rotatably mounted about said shaft with said lever disposed adjacent to said tension knob.

-11-

The chair of claim 10 further comprising an adjustable height support column;  
and

a height control mechanism for selectively adjusting a height of said support  
10 column, said height control mechanism including a push button mounted within said tension knob.

-12-

A chair comprising:

a recliner mechanism;

15 a back mounted to said recliner mechanism, said back being reclinable between a default position and a reclined position under a rearward force;

a seat movably mounted to said recliner mechanism and operatively linked to said back, whereby said seat moves forwardly from a rearward position to a forward position as said back moves from said default position to said reclined position;

20 a bias means for biasing said seat in said rearward position at a tension, said bias means including a biasing element extending between said recliner mechanism and said seat, said biasing element having a pre-tension;

-35-

a tension control mechanism for adjustably controlling said tension by selectively varying said pre-tension in said biasing element.

-13-

The chair of claim 12 wherein said tension control mechanism includes a control knob rotatably mounted to said chair, said control knob being operatively connected to said biasing element, wherein rotation of said control knob results in variation in said pre-tension in said biasing element.

-14-

The chair of claim 13 wherein said control mechanism includes a cam mounted to said control knob whereby rotation of said control knob results in rotation of said cam, said cam being operatively connected to said biasing element, wherein rotation of said cam results in variation in said pre-tension in said biasing element.

-15-

The chair of claim 14 wherein said control mechanism includes a pre-tension lever operatively linked to said cam, said pre-tension lever pivoting in response to rotation of said cam, said pre-tension lever being operatively connected to said biasing element, wherein pivoting of said pre-tension lever results in variation in said pre-tension in said biasing element.

-16-

The chair of claim 15 wherein said control mechanism provides full adjustment of said tension by rotation of said control knob through no more than about 180 degrees.

-36-

-17-

The chair of claim 16 wherein said recline mechanism permits said back to recline to an adjustable limit; and

5 further comprising a recline limit control mechanism for adjustably controlling said limit, said control mechanism including a trackway and a stop, at least one of said trackway and said stop traveling forwardly along a path as said seat moves forwardly, said selectable limit being defined by engagement of said stop with said trackway, said stop being movable with respect to said trackway such that said selectable limit is adjusted by movement of said stop.

10

-18-

The chair of claim 17 wherein said control knob is mounted upon a shaft protruding from a control housing, said recline limit control mechanism including a lever mounted over said shaft.

-19-

15

The chair of claim 18 further comprising an adjustable height support column; and

a height control mechanism for selectively adjusting a height of said support column, said height control mechanism including a push button mounted within said tension knob.

20

-20-

A chair comprising:

a pedestal having an adjustable height support column;

-37-

a recliner mechanism mounted atop said support column;

a back mounted to said recliner mechanism, said back being reclinable between a default position and a reclined position under a rearward force;

5 a seat movably mounted to said recliner mechanism and operatively linked to said back, whereby said seat moves forwardly from a rearward position to a forward position as said back moves from said default position to said reclined position;

a bias means for biasing said seat in said rearward position at a tension;

a tension control mechanism having a control knob, said control knob being rotatable to selectively adjust said tension;

10 a height control mechanism for selectively adjusting a height of said support column, said height control mechanism including a push button mounted within said control knob.

-21-

The chair of claim 20 wherein said height control mechanism includes a wing  
15 movably mounted to said recliner mechanism, said push button operatively linked to wing such that actuation of said push button results in movement of said wing.

-22-

The chair of claim 21 wherein said support column includes a toggle switch,  
said wing being operatively linked to said toggle switch, whereby movement of said wing  
20 results in actuation of said toggle switch.

-38-

-23-

The chair of claim 22 wherein said support column includes an upper tube telescopically fitted within a lower tube, said toggle switch protruding from said upper tube.

-24-

5

A chair comprising:

a pedestal;

a seat and back mounted atop said pedestal, said back including a load bearing fabric mounted within a frame; and

a lumbar support mounted to said frame of said back, said lumbar support

10

including a lumbar pad and a lumbar cam, said lumbar pad being substantially flexible and being disposed adjacent to said load bearing fabric in a lumbar region of said back, said lumbar cam including a lobe engaging said lumbar pad, said lobe having a radius that varies about said shaft, whereby rotation of said lumbar cam varies a contour of said lumbar pad and said lumbar region of said back.

15

-25-

The chair of claim 24 wherein said lumbar cam is rotatably mounted to said lumbar pad.

-26-

The chair of claim 25 wherein said lumbar pad includes a pair of clevises

20

rotatably receiving opposite ends of said lumbar cam.

-39-

-27-

The chair of claim 26 wherein said lumbar cam is mounted to said back for vertical movement.

-28-

5           The chair of claim 27 wherein said lumbar cam is mounted to said back by a pair of brackets, each of said brackets defining a vertically extending channel, said lumbar cam being movable fitted within said channels.

-29-

10           The chair of claim 28 wherein said lumbar pad includes a structural insert and a cushioning material overmolded onto said insert.

-30-

The chair of claim 29 wherein said lumbar pad includes a flange and said lumbar cam includes a plurality of locating ribs, said flange disposed to engage said ribs.

-31-

15           The chair of claim 30 wherein at least one of said brackets includes a plurality of protrusions extending into said channel to interfere with but not prevent movement of said lumbar cam within said channel.

-32-

20           The chair of claim 31 wherein said lumbar cam includes a center lobe and a pair of outer lobes.

-40-



-33-

The chair of claim 32 wherein each of said lobes has a radius that varies about said shaft.

-34-

5                   The chair of claim 33 wherein said lumbar cam is rotatable between four distinct positions, said lobes being configured to define four distinct lumbar contours at each of said four distinct positions.

-35-

A chair comprising:

10                   a pedestal;

a seat and a back mounted atop said pedestal, said back including a back frame, a back carrier mounted within said back frame and a load bearing fabric mounted within said back carrier, said back carrier defining an upper back mounting platform for receiving one of a plurality of modular upper backs; and

15                   a modular upper back mounted to said upper back portion mounting platform.

-36-

The chair of claim 35 wherein said back carrier includes a front surface, said mounting platform being recessed from said front surface.

-37-

20                   The chair of claim 36 wherein said modular upper back includes a depth, said mounting platform being recessed from said front surface a distance substantially equal to said depth.

-41-

-38-

The chair of claim 37 wherein said modular upper back includes opposite ends, said opposite ends of said upper back being interfitted with said mounting platform to preclude separation of said opposite ends of said upper back from said mounting platform when said  
5 upper back is under force.

-39-

The chair of claim 38 wherein said mounting platform defines a plurality of screw bosses, said modular upper back including a plurality of screw holes aligned with said screw bosses of said mounting platform.

10

-40-

A chair comprising:

a pedestal;

a seat and a back mounted atop said pedestal;

an armrest assembly mounted atop said pedestal adjacent said seat, said armrest  
15 assembly including a tube movably secured to an upright and an armpad secured to said tube, said armrest assembly further including a ratchet mechanism for adjusting a height of said tube with respect to said upright, said ratchet assembly includes a plunger reciprocally carried by said tube and a plurality of notches defined by said upright, said ratchet assembly further including a biasing means for biasing said plunger into engagement with said notches.

-42-

-41-

The chair of claim 40 wherein said ratchet mechanism includes a reset means for retaining said plunger in a retracted position out of engagement with said notches to permit said tube to be lowered with respect to said upright.

5

-42-

The chair of claim 41 wherein said reset means includes a catch means for releasably retaining said plunger in a retracted position upon alignment of said plunger with said catch means, said reset means further including a surface retracting said plunger into alignment with said catch means when said tube is moved to its upper extreme with respect to  
10 said upright.

-43-

The chair of claim 42 wherein said reset means further includes a second surface disengaging said plunger from said catch means when said tube is moved to its lower extreme with respect to said upright.

15

-44-

The chair of claim 43 wherein said armrest assembly includes a pivot mechanism providing adjustment of an angle of said armpad by rotation of said tube with respect to said upright, said pivot mechanism including an upper member mounted to said tube and a lower member rotatably mounted to said lower member, said lower member being  
20 coupled to said upright so as to prevent rotation of said lower member with respect to said upright, said plunger being mounted within said lower member.

-43-

-45-

The chair of claim 44 wherein said pivot mechanism further includes a means for defining a range of pivotal movement of said tube.

-46-

5           The chair of claim 45 wherein said means for defining a range of pivotal movement of said tube includes a pin mounted to one of said upper member and said lower member, said pin extending into an arcuate slot in the other of said upper member and said lower member, said pin moving through said slot upon rotation of said tube.

-47-

10           The chair of claim 46 wherein said means for defining a range of pivotal movement of said tube includes at least one protrusions extending into said arcuate slot to interference with but not prevent movement of said pin through said slot.

-44-